

AN INVESTIGATION OF HEALTH DECISION-MAKING SKILLS AMONG AMERICAN INDIAN ADOLESCENTS

JEBOSE O. OKWUMABUA, Ph.D.
THERESA M. OKWUMABUA, Ph.D.
ELIAS J. DURYEA, Ph.D.

Abstract: The investigation examined the health and social decision-making skills of a sample of 44 seventh-graders (mean age = 12.6 years) of American Indian descent. The students were presented with 10 scenarios describing a young person in the act of making a decision and were required to identify the next step the youth in the scenario should take to make a "wise" decision. There were no differences in the students' efficacy in making decisions with a health or social focus. However, some interesting differential patterns emerged for making health and social decisions. These findings may be beneficial to school health curriculum specialists, school psychologists, health behavior specialists, and health personnel who interact regularly with American Indian adolescents.

Introduction

Competence in decision-making may be an important prerequisite for children to achieve optimal health (Duryea, 1983; Lammers, Kreuter, & Smith, 1984). Relatively little is known, however, about the health decision-making of children. The available information is not only piecemeal and fragmentary but the data is largely derived from samples of black and/or white children residing in metropolitan areas (Mann, 1971; Duryea, 1979; Lammers, Kreuter, & Smith, 1984). There appears to be a complete absence of data concerning health decision-making among American Indian children.

American Indian children are frequently cited, however, as a group at high risk for engaging in health-compromising behaviors. For example, drug use is higher in all categories of mood-altering drugs (e.g., marijuana, inhalants, and cocaine) among American Indian adolescents than it is for their counterparts in the mainstream population (Beauvais & LaBoueff, 1985). Similarly, risky alcohol and drug-related behaviors such as drinking and driving, riding with drinking drivers, and using marijuana are prevalent among Indians, and are considered major factors contributing to the high morbidity and mortality rates among Indian youth (Oetting, Edwards, Goldstein, & Garcia-Mason, 1980). The morbidity and mortality rates among Indian youth are four times higher than the national average (Rhoades, 1982).

In light of these findings and the postulated relationship between decision-making and risky health behaviors, it is imperative that decision-

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making skills among American Indian adolescents be examined. The present investigation represents an effort to provide information concerning the process and dynamics of health decision-making among a sample of these adolescents.

Methods

Subjects

The sample consisted of 44 seventh-graders (mean age = 12.6; range = 11 to 13 years) of American Indian descent. There were approximately equal numbers of males (n=23) and females (n=21) in the sample. All of the participants attended a boarding school exclusively for American Indian children. The sample represented 85% (N=52) of the seventh-graders at the study school. The school is located in a major metropolitan city in the Southwest but served American Indian children from throughout the United States. The student body included children from the 19 Pueblo tribes with a significant number of Navajo, Apache, Hopi, and Jicarillo Indians. There were also students from the Blackfoot, Caddo, Cheyenne, Choctaw, Comanche, Kiowa, Sioux, and Ute tribes.

Contrary to descriptions of boarding schools for Indians provided elsewhere (Schottstaedt & Bjork, 1977), the school was operated by the All Indian Pueblo Council, Inc., not the Bureau of Indian Affairs. The All Indian Pueblo Council was the first Indian organization to contract and operate its own school under the Indian Self-Determination Act (P.L. 93-638). In addition, the sole criterion for admission to the school was that a child be at least one-quarter Indian. The school was not intended for children with emotional, psychological, or social problems. Respect for American Indian culture and tradition as well as academic excellence are emphasized in the school's curricula, policies, and administration.

Decision-Making Instrument

A modified version of the Decision-Making Instrument (Centers for Disease Control, 1984) was used to assess students' decision-making skills as well as to examine their understanding of the general decision-making process. The Decision-Making Instrument consists of a series of written scenarios describing a young person in the act of making a decision. For each scenario, a selected step in the decision-making process is provided within the scenario and/or in a series of choices that follow the written presentation. Decision-making choices include defining the problem; identifying possible solutions; weighing costs/benefits of each solution; making a decision; and evaluating a decision. Students are required to read the scenario, think about the risky behaviors depicted in the passage, consider options available to the youth, and then select (from possible alternatives) the next step the youth described in the scenario would take to make a

"wise" or health-enhancing decision. The instrument has been found by the Centers for Disease Control (CDC) to be reliable and valid in assessing adolescents' decision-making skill.

The Decision-Making Instrument was slightly modified in the present investigation to be culturally relevant and comprehensible to a sample of American Indian youth. That is, realistic aspects of American Indian culture and life were depicted in each scenario. For example, there were references to familiar Indian reservations (e.g., Santo Domingo Pueblo), activities (pow-wows), familial relations (aunts as key familial figures), and celebrations (San Felipe Fiesta). The structural fidelity of the instrument was not altered.

The instrument was also modified to examine student's decision-making skill based on a four-step, rather than the conventional five-step, decision-making process. This approach was adopted because research has shown that the most important components of decision-making involve four-steps: 1) define the problem; 2) identifying possible solutions; 3) weighing costs and benefits; and 4) making a decision (Janis & Mann, 1977). Evaluating the decision, the fifth step posited in the Decision-Making Instrument, is not considered a core component of the standard decision-making process but rather a beneficial evaluation component (Janis & Mann, 1977; Kolbe et al., 1981; Duryea, Kreuter, & Braza, 1981; Renaud-Salis, 1980). Except for these modifications, the decision-making assessment used in this investigation was identical to the CDC Decision-Making Instrument.

A total of 10 decision scenarios were presented in the present study. Each scenario depicted all but one step of the decision-making process. For example, scenario #1 illustrated all but step #2 (identifying possible solutions); scenario #2 illustrated all but step #1 (defining the problem); and scenario #4 excluded step #4 (making a decision). As in the conventional procedures, students were required to read the passage, think about the risky behavior depicted in each scenario, consider possible solutions available to the youth, and then identify the next appropriate step the youth described in the scenario should take to make a "wise" or health-enhancing decision. Five of these scenarios involved a social-decision focus (e.g., deciding how to avoid a conflict with a sibling) and five involved a health-decision focus (e.g., deciding whether or not to ride with a drinking driver).

Extensive review of the instrument by curriculum specialists and teachers at the study school was used as a minimal measure of the instrument's comprehensibility and ethnic propriety in assessing relevant health and social issues among Native Americans. Reliability of the instrument was assessed at .81 by employing a Pearson test-retest correlation procedure. Face validity of the instrument was judged and found to be appropriate by a panel of experts from the University of New Mexico, local American Indian curriculum specialists, and participating teachers at the study school.

Procedure

Informed consent was obtained from parents and students prior to the start of the study. The school utilizes a blanket consent from parents for the purpose of administering informal tests and questionnaires. The instrument was administered to consenting students by their teacher during a regularly scheduled health class. The teacher read a standardized format of instructions which described the purpose of the project, assured confidentiality of students' responses, and provided directions for completion and return of the instrument. Students were instructed not to place any identifying information (e.g., name, social security number) on the assessment instrument and to place completed forms in a box at the back of the room. At the end of the class, a student delivered the box to the principal's office.

Data Analysis

A total of 10 scenarios was analyzed (five with a health-decision focus and five with a social-decision focus). The criterion level for a student's successful performance on both of these decision-making categories was established at 80% (i.e., 4 out of 5 correct responses). That is, at least four correct decision-making choices out of the five scenarios for each decision-making category (i.e., health and social) were required for successful performance.

Students' incorrect responses were classified into one of four categories according to the CDC's (1984) method of annotation. The errors could involve a response that 1) is unrelated to effective decision-making and may deflect the decision-maker from taking necessary action (deflective action); 2) describes a decision-making step but is clearly inconsistent with one or more of the step's described characteristics (ineffective implementation of a step); 3) describes one of the decision-making steps that occurs after the correct step (skipped step); or 4) describes one of the decision-making steps that has already occurred (repeated a step).

Results

In general, students responded successfully to approximately 50% of the decision-making scenarios (mean=5.2; s.d.=1.67; range=1-9). There were no statistically significant differences in the students' efficiency at making decisions with a health-behavior or social-behavior focus. The average student successfully responded to 2.61 (s.d.=1.06; range=0-5) scenarios with a health-behavior focus and 2.68 (s.d.=1.19; range=1-5) scenarios with a social-behavior focus.

In addition to considering the students' overall decision-making skills, an attempt was made to evaluate the process of student decision-making. This was achieved by subjecting the students' incorrect responses

to an error analysis. Error responses were tabulated and classified according to the method of annotation described previously (CDC, 1984). According to this method, students' errors in decision-making were classified as involving a skipped step, a repeated step, an ineffective implementation of a step, or a defective action. All incorrect responses were placed within one of these categories. Table 1 shows the error distribution for both the health behavior and social behavior focus scenarios.

Table 1
Mean Number of Errors in Decision-Making Involving Skipped Step, Repeated Step, Ineffective Implementation of a Step, and Deflective Action

Error Type	Problem Focus					
	Health			Social		
	Mean	S.D.	Range	Mean	S.D.	Range
Skipped Step	.75	.75	0-2	1.15	.88	0-3
Repeated Step	.95	.74	0-2	0	0	0
Ineffective Implementation of a Step	.25	.53	0-2	.81	.89	0-3
Deflective Action	.20	.40	0-1	.36	.57	0-2

The total number of errors tabulated was 206, with 104 derived from scenarios with a health-behavior focus and 102 from scenarios with a social-behavior focus. There was no statistical difference in the number of errors students made in their responses to either decisions with a health-behavior or social-behavior focus. T-test comparisons of the mean number of errors for the scenarios with a health or social focus revealed significant differences in the number of errors involving skipped steps ($t=2.36$, $df=43$; $p < .05$), repeated step ($t=-8.84$, $df=43$; $p < .05$), and ineffective implementation of a step ($t=4.07$, $df=43$; $p < .05$).

As shown in Table 1, children made more errors involving "skipped step" (mean=1.15, s.d.=.88) and "ineffective implementation of a step" (mean=.81, s.d.=.89) when the scenario had a social-decision focus than when it involved a health-decision focus. Students never made the error "repeated step" when the scenario had a social-decision focus. Conversely, when the decision scenario was health-related, students made more errors involving "repeated step" (mean=.95, s.d.=.74) than any other error category. They were also less likely to ineffectively implement a step (mean=.25, s.d.=.53) if the scenario had a health focus.

Discussion

This study examined the decision-making skills of a sample of American Indian adolescents. Findings from this and prior studies (e.g., Duryea, Kreuter, & Braza, 1981) suggest that adolescents are equally efficacious in their ability to make decisions with a health or a social focus. It may be appropriate to speculate that in making decisions, there is a transition in children's thinking where they shift from basing their decisions on the health consequences of behavior (e.g., becoming ill as a result of one's behavior) to focusing on the social consequences of behavior (e.g., not being accepted by one's peer group as a result of one's behavior).

Supposedly, this transition takes place between 11 and 13 years, the age of most children in this study. If indeed children shift from health priorities to social priorities between the ages of 11 and 13 years in their decision choices, differences in the health and social decision-making skills among this sample of American Indian adolescents should not be expected.

Perhaps the most intriguing finding in this study pertained to the students' pattern of incorrect responses to the decision-making scenarios. Students seemed to make more errors involving "skipped steps" and "ineffective implementation of a step" when the scenario had a social focus than when it involved a health focus. Furthermore, students never reported an error of "repeating step" when the scenario had a social decision focus. In contrast, when the decision focus was health-related, students made more errors involving "repeating a step" than any other error type.

Exactly why students responded in this manner is unknown. Some would argue, however, that the different response patterns may be due to the students' cognitive capabilities. That is, it may be that the different error types were made by children at various stages of cognitive development. Certainly, Piaget (Inhelder & Piaget, 1964a) emphasized stages of children's cognitive development from preoperational (about 3 to 6 years) through concrete operational (about 7 to 11 years) to formal operational (about 12+ years).

Although children's level of cognitive development was not assessed in this study, previous studies have shown that there are clear limitations in the kinds of plans or strategies children at various cognitive levels are capable of manifesting (Gholson, Levine, & Phillips, 1972; Gholson, Phillips, & Levine, 1973; Gholson, 1980). For example, preoperational children lack the cognitive capacities to manifest any strategy. Hence, in a decision-making situation a preoperational child is likely to exhibit random responses that involve no logical structure. In contrast, concrete operational children can think relationally, generalize to and from others, and are capable at reversing causal explanations. They have the logical structures necessary to formulate a systematic plan and carry it through (Inhelder & Piaget, 1964a). However, children at this stage may have problems integrating several variables in causal relationships. It is only the child in the formal operational stage who is capable of thinking

hypothetically and abstractly. In essence, the formal operational child is capable of differentiating between self and environment and considering multiple alternatives in decision-making situations.

Based upon the findings from this investigation, it is obvious that additional studies are needed to clarify the relationship between children's cognitive level and their pattern of responding in decision-making situations. We hope that this study will generate more research endeavors in health decision-making dynamics among adolescents, particularly among American Indian adolescents. For instance, issues such as content of thinking during decisions, consistency of thinking, the most effective level of reflection, as well as cultural factors need to be systematically investigated within specific tribal populations.

It is hoped that individuals such as health curriculum specialists, school psychologists, health behavior specialists, pediatricians, and health personnel who work regularly with American Indian adolescents will be encouraged to consider the cognitive developmental level and decision-making skills of the children with who they are working. This may be a critical initial step in efforts to design appropriate intervention strategies to promote health and prevent disease among American Indian adolescents as well as the mainstream adolescent populations.

Department of Health, Physical Education & Recreation
Memphis State University, College of Education
Memphis, Tennessee 38152

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SPECIAL COMMENTARY

This American Indian and Alaska Native Mental Health Research Agenda has been developed by Dr. Bill G. Douglas, Director of Mental Health Data Analysis and Research of the Indian Health Service, pursuant to a Delphi process which involved Indian and research personnel across the country. It was developed to identify research topics for possible funding, with the primary criterion that the results yield clinical, program, or other benefits to improve the mental health of American Indian and Alaska Native people.

American Indian and Alaska Native Mental Health Research Agenda

Category I: Better definitions of the nature and scope of mental health problems in American Indian and Alaska Native populations. These range from general descriptive data, which can be used to make comparative assessments within and between IHS service populations as well as with non-Indian populations, to specific kinds of problems and sets of issues.

What are the incidence and prevalence rates for mental disorders (as currently defined by DSM-III-R) in American Indian and Alaska Native populations, and how can these data be organized in such a way that meaningful comparisons, both between various aggregates of Indian populations and with non-Indian populations be made?

What is the incidence of physical abuse, sexual abuse and neglect of children in American Indian and Alaska Native communities?

What are the significant cultural, social, and psychological factors, and their interactions, associated with suicide behavior in American Indian and Alaska Native populations?

How are American Indian and Alaska Native suicide completions associated with previous suicide attempts?

What is the incidence of childhood sexual abuse in male and female patients seeking mental health services?